

## **APPENDIX K**

### **STUDY OF BREAKTHROUGH IN DUAL CARBON CANISTERS**

1. MAP shall conduct a study of dual carbon canisters designed to determine the concentration of VOCs or benzene that may be emitted from the primary (lead) carbon canister in a dual series before VOCs above background or benzene above 1 ppm is emitted from the secondary (tail) carbon canister.

2. MAP shall select a total of ten dual carbon canisters from its Catlettsburg, Garyville, and Texas City Refineries. In making the selection, MAP shall review the frequency with which each primary carbon canister historically has been changed out, and shall include in the study, to the extent possible, dual canister systems in which the life expectancy of the primary canisters vary. MAP shall include, if possible, at least five dual carbon canisters where the life expectancy of the primary canister is approximately one month or less. MAP may include two 150 gallon-size carbon canisters and eight 55 gallon-size carbon canisters.

3. By no later than thirty (30) days after the Date of Lodging of the Consent Decree, MAP shall submit to EPA a proposal that identifies the location and size of each of the selected dual carbon canisters and the historical life expectancy of the primary canister in each series. If EPA comments upon MAP's proposal, the parties shall endeavor to come to agreement informally. Unless, within thirty (30) days after receipt of MAP's proposal, EPA provides comments, MAP shall commence the study ("Commencement of the Study"), and shall notify EPA of the date of the Commencement of the Study.

4. By no later than seven days after the Commencement of the Study, MAP shall monitor each of the selected dual carbon canister systems for breakthrough between the primary and secondary

carbon canisters and for emissions from the secondary canister. Thereafter, MAP shall monitor for breakthrough between the primary and secondary canisters in accordance with the frequency specified in 40 C.F.R. § 61.354(d).

5. On the first monitoring occasion in which breakthrough between the primary and secondary canister reaches 50 ppm or greater of VOCs, MAP shall monitor, on that same day, emissions from the secondary canister. On a daily basis thereafter, MAP shall monitor emissions from both the primary and secondary canister.

6. At such time as emissions from the secondary canister reach either a VOC concentration above background or a benzene concentration of 1 ppm, MAP shall replace the primary canister with the secondary canister. The provisions of this Appendix K, and not Subparagraph 18.E.iii, shall apply to the timing of the replacement of any primary canister that is a subject of this study, for so long as the carbon canister is monitored for purposes of the study. After the carbon canister no longer is monitored for purposes of this Study, the provisions of Subparagraph 18.E.iii. shall govern the timing of the replacement of the primary canisters, unless and until EPA redefines the meaning of “breakthrough” pursuant to Subparagraph 18.E.i.

7. Contemporaneously with each monitoring event undertaken pursuant to this Appendix K, MAP shall maintain a written record of the time, date, and monitoring results.

8. For each dual carbon canister in which the primary canister has a life expectancy of one month or less, MAP shall conduct the monitoring specified in Paragraph 5 for one year. For each dual carbon canister in which the primary canister has a life expectancy of greater than one month, MAP shall conduct the monitoring specified in Paragraph 5 for the greater of: (i) one year; or (ii) three cycles

of the subject carbon canister system, not to exceed two years.

9. For each dual carbon canister in which the primary canister has a life expectancy of one month or less, by no later than one year and three months after the date of the Commencement of the Study, MAP shall submit a report to EPA that includes, but is not limited to, the monitoring data, the replacement dates of the primary carbon canisters, and MAP's recommendations regarding the concentration of VOCs or benzene that may be emitted from the primary canister in a dual series before VOCs above background or benzene above 1 ppm is emitted from the secondary canister. By no later than sixty (60) days after receipt of the report, EPA and MAP jointly shall evaluate the breakthrough limits set forth in Subparagraph 18.E.i, to determine if any revisions to that Subparagraph are necessary with respect to carbon canisters in which the primary canister has a life expectancy of one month or less.

10. For each dual carbon canister in which the primary canister has a life expectancy of greater than one month, MAP shall submit a report that contains the same information set forth in Paragraph 9 by no later than ninety (90) days after completing all required monitoring. By no later than sixty (60) days after receipt of the report, EPA and MAP jointly shall evaluate the breakthrough limits set forth in Subparagraph 18.E.i, to determine if any revisions to that Subparagraph are necessary with respect to carbon canisters in which the primary canister has a life expectancy of greater than one month.